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treeless regions of Alaska have been suggested, but have never been put to practical test. During the months of June and July, 1900, extensive fires swept through much of the treeless region of Nome and other portions of the Seward Peninsula. The moss and grass, when dry, were found to burn rapidly with considerable flame, and fires ran over nearly the entire region visited by prospectors during the dry months. This fact makes it evident that the surface growth of the tundra could be used for fuel, provided it were properly dried. This material has in many cases been accumulated to considerable thickness in peat bogs. With regard to the third source of fuel supply, petroleum, we have no definite knowledge of its existence in commercial quantities. It is reported to have been found in southeastern Alaska, between Yakutat and Controller bays, south of Mount St. Elias, and also on the east side of Cook Inlet near Kachemak Bay.

CRUISE OF THE ALBATROSS.

THE Fish Commission steamer *Albatross*, which sailed from San Francisco on March 11, arrived at Honolulu on March 24, as noted in SCIENCE of April 11. Heavy weather was encountered almost immediately after leaving port, and on the 12th the quartermaster of the watch was lost overboard while taking the reading of the patent log. Much interesting pelagic material was obtained with surface and intermediate nets on the outward voyage. An attempt, extending over two days, to determine the nature of the life on Erben Bank was unsuccessful, as the peculiar laval formation of the bottom resulted in the loss of all the trawls and other appliances used and subjected the dredging cable to an unprecedented strain.

The surface collecting off Waikiki on March 27 by the aid of electric light is reported by Dr. Gilbert to have been probably the most successful work of the kind ever done. Among the creatures thus obtained is a remarkable animal, first identified as a crustacean, afterwards called a worm, and finally considered a vertebrate; its eyes are on stalks half an inch long.

SCIENTIFIC NOTES AND NEWS.

DR. DANIEL COIT GILMAN, president of the Carnegie Institution, sailed for Europe on April 17, with a view to studying foreign scientific institutions.

PROFESSOR WILLIAM JAMES is at present abroad, in order to give his second course of Gifford lectures at Edinburgh. Dr. Gwatkin, professor of ecclesiastical history in the University of Cambridge, has been appointed to succeed Professor James as Gifford lecturer.

PROFESSOR SOLON I. BAILEY, of the Harvard Astronomical Observatory, is about to leave for the observatory's branch at Arequipa, Peru, where he will especially study the planet Eros.

DR. W. H. R. RIVERS, of Cambridge University, will shortly start on an expedition for the psychological study of the Todas of southern India on the lines of his work in Torres Straits.

M. T. OBALSKI has been sent by the French Government and the Paris Museum of Natural History to Canada to make collections and study the natural history and industries of the country.

PROFESSOR FRANZ SOXHLET, of the Munich technical school and director of the agricultural experimental station, has been made chevalier of the Order of Merit of the Bavarian Crown.

A VOLUME has been published commemorating the jubilee celebration in honor of M. Berthelot, held on the twenty-fourth of November last. Copies of the plaque struck in his honor have been presented to all members of the French parliament.

WE noted in our last issue that Professor Keen, of Philadelphia, had been made an honorary member of the German Surgical Association at its thirty-first Congress. The other honorary members were Professors Bergmann and König, of Berlin, Professor Guyon, of Paris, Professor Durante, of Rome, and Professor MacEwen, of Glasgow.

JOSEPH J. KINYOUN, M.D., Ph.D., late surgeon of the Marine Hospital Service and director of the Hygienic Laboratory at Wash-

ington, assumed the directorship of the biological laboratories of the H. K. Mulford Company at Glenolden, Pa.

It is planned to found at Edinburgh University a laboratory in memory of the late Professor Tait. A subscription of £1,000 has been received.

PROFESSOR HANS BÜCHNER, the eminent bacteriologist, died at Munich on April 5, in the fifty-second year of his age.

THE following amendments to the Sundry Civil Appropriation Bill have been proposed in the Senate: An amendment proposing to appropriate \$5,000 for the preparation of preliminary plans for an additional fireproof building to cost not exceeding \$2,500,000 for the United States National Museum; an amendment proposing to increase the appropriation for the expenses of the system of international exchanges between the United States and foreign countries, under the direction of the Smithsonian Institution, from \$24,000 to \$29,800; an amendment proposing to increase the appropriation for continuing the preservation, exhibition, and increase of the collections in the National Museum from the surveying and exploring expeditions of the Government from \$180,000 to \$200,000; an amendment proposing to increase the appropriation for the National Zoological Park at Washington, D. C., from \$80,000 to \$110,000, and providing that \$20,000 of this amount shall be expended in the construction of a boundary fence, including entrance gates; an amendment proposing to appropriate \$20,000 for the construction of an elephant house at the National Zoological Park, Washington, D. C.; and an amendment proposing to appropriate \$25,000 for the construction of an aquarium building at the National Zoological Park, Washington, D. C.

THE U. S. Civil Service Commission announces an examination on May 15, for the positions of botanist in charge of grain investigations and of assistant curator in the Bureau of Plant Industry. The salary of each position is \$1,800. An examination will also be held on May 6 and 7 for the position of field assistant in forestry in the Bureau of Forestry at a salary of \$1,000.

THE executive committee of the Carnegie Institution held a meeting at Washington on April 15.

PROFESSOR W. R. BROOKS, director of the Smith Observatory at Geneva, N. Y., announces the discovery of a comet in the constellation Pegasus. The comet has been observed at the Lick and Kiel Observatories.

PROFESSOR VON LEYDEN claimed before the German research committee on cancer, at Berlin, on March 21, the discovery of the microorganism of cancer. He concluded by the assertion that 'cancer is an infectious disease, dependent on parasitic organisms (protozoa) identical with those discovered by him and exhibited to the meeting.'

THE board of estimate of New York City has authorized the issue of bonds for public improvements giving \$250,000 to the Zoological Park and \$150,000 to the Botanical Garden.

MR. ANDREW CARNEGIE has made the Public Library Board of Cincinnati an offer of \$180,000 with which to erect six new branch library buildings in different parts of the city. He stipulates that the Board shall supply \$18,000 a year for the maintenance of the proposed branches.

DR. V. GUAITA has given 15,000 Marks to the University at Freiburg for a fund to aid in supporting scientific expeditions.

As we learn from the *British Medical Journal*, the Prussian Government has voted 26,000 Marks for lecture courses in hygiene, forensic medicine, and psychiatrics which are to be held in Berlin for the benefit of the district health officers. Professor Koch and his assistants will take charge of the hygiene course (chief stress to be laid on the prevention of epidemics); Professors Jolly and Moeli will undertake psychiatrics, the former in his department at the Charité, the latter in the Herzberge Asylum. The courses are to be gratis, and the hearers will receive a fixed sum for traveling and lodging expenses. If these courses should prove as successful and useful as is hoped, they are to be repeated, and may grow into a permanent institution.

As announced last year, the association for maintaining the American women's table at

the Zoological Station at Naples and for promoting scientific research by women offers a prize of one thousand dollars for the best thesis, written by a woman, on a scientific subject presented before December 31, 1902. A second prize of one thousand dollars is now announced by the same association. The theses offered in competition are to embody new observations and conclusions based on independent laboratory research in biological, chemical or physical science, and are to be in the hands of the chairman of the prize committee, Mrs. Ellen H. Richards, Massachusetts Institute of Technology, Boston, Mass., before December 31, 1904.

WE regret to learn that the Mayor of San Francisco has removed the Board of Health of that city on the alleged ground that their report of the presence of the bubonic plague in that city was incorrect.

THE *British Medical Journal* states that the Congress of the Association of French and Foreign Anatomists opened at Montpellier on March 24, under the presidency of M. Sabatier, dean of the faculty of science. About sixty delegates from various parts of France and from Switzerland, Belgium, Spain, Italy and Germany took part in the proceedings. A number of interesting papers were read. The principal feature of the Congress seemed to be a desire to establish a closer union between anatomy and physiology, between the study of the structure of an organ and its function.

ARRANGEMENTS have been made for a nature study exhibition to be held at the gardens of the Royal Botanic Society, London, on July 23 and following days. It will be open to colleges and schools of every grade, and the exhibits will include all that bears upon nature study. Various technical institutions and other educational authorities have arranged to defray the cost of the conveyance to exhibits from their respective areas, and preliminary exhibitions for the purpose of selecting the best material to send are being organized.

THE valuable medical library of the late Professor von Ziemssen, containing twenty-five thousand books and pamphlets, has been purchased by the Leipzig bookseller, Gustav Fock.

It would be an advantage if the library could be secured for an American institution.

A DESPATCH to the New York *Herald* from Montevideo says that news has been received from the Swedish Antarctic expedition under Dr. Otto Nordensjöld. The expedition has disembarked at Snow Hill, Louis Philippe Land, accompanied by the surgeon, Dr. Eklof, the Argentine Lieutenant Sobral and two sailors, one of whom was a member of the Duke of Abruzzi's Arctic expedition. From Cape Horn Dr. Nordensjöld's vessel, the *Antarctic*, tried to sail directly south, but it encountered too many icebergs, and there was danger of the ship being imprisoned in the ice for a long time. Dr. Nordensjöld then decided to change his course. His expedition will remain at Snow Hill until next summer.

M. ADRIEN DE GERLACHE, the Belgian navigator whose expedition to the south Antarctic five years ago will be remembered, is contemplating another voyage on a more extensive scale. M. de Gerlache hopes to leave one of the French ports in September of next year, when a vessel will be fitted out at the expense of a French capitalist.

THE auxiliary barque-rigged yacht, *Morning*, which is now being fitted out under the direction of Sir Clements R. Markham, president of the Royal Geographical Society, for the Antarctic Relief Expedition, will sail under the flag of the Royal Corinthian Yacht Club, and will lie off the club-house at Port Victoria until ready to start.

THE New York Botanical Garden announces the spring lectures for 1902, to be delivered in the Lecture Hall of the Museum Building of the Garden, Bronx Park, on Saturday afternoons, at 4:30 o'clock, as follows:

April 19, 'The Maples and other Early-flowering Trees': CORNELIUS VAN BRUNT.

April 26, 'Plant Life of the Sea': DR. MARSHALL A. HOWE.

May 3, 'Botanical Features of Porto Rico': Professor L. M. UNDERWOOD.

May 10, 'Some Examples of Botany in its Relation to Geology': DR. ARTHUR HOLLIICK.

May 17, 'Wild Flowers, the Necessity for their Preservation': MR. CORNELIUS VAN BRUNT.

May 24, 'The Cottons': DR. H. H. RUSBY.

May 31, 'Cactuses and Cactus-like Plants': Dr. N. L. BRITTON.

June 7, 'Favorite Flowers of Nations and Poets': Professor E. S. BURGESS.

June 14, 'The Vegetation of American Deserts': Dr. D. T. MACDOUGAL.

The lectures will be illustrated by lantern slides and otherwise. They will close in time for auditors to take the 5:38 train from the Bronx Park railway station, arriving at Grand Central Station at 6:04.

THE Rome Correspondent of the London *Times* reports that Signor Boni, director of Excavations in the Roman Forum, has made another discovery of unusual interest. It has long been his conviction that the subsoil of a part of the Forum contains the necropolis of the founders of Rome and that, given the Aryan origin of those founders, the character of the tombs must be in accordance with the Aryan custom of cremation. Critics have displayed much scepticism concerning this theory, as also concerning the traces of Aryan development which Signor Boni has detected in the Forum; but he has once more silenced their objections by producing the object whose existence they had doubted or denied. He has discovered a prehistoric tomb, believed to date approximately from the eighth century B.C., containing a large urn, or *dolium*, of black ware full of calcined bones, and several reticulated egg-shaped vases, besides a bowl and a cup with horned handles like those found in the *terremare* of the bronze age. The tomb is situated in the bed-clay some twelve feet below the level of the Sacred Way, opposite the Regia, and close by the Temple of Antoninus and Faustina. In some respects this discovery is the most important yet made in the Forum. One tomb is not a necropolis, but it is presumptive evidence of the existence of others. Unless the Italian Government should, to its shame, restrict the funds necessary for the exploration of the lower *strata* of the Forum, the point will soon be settled. Meanwhile, it is to be noted that the reticulated vases of the tomb bear a striking resemblance to netted gourds, and that the covering of the funeral urn is a faithful reproduction of a conical hut roof—signs that they date from a primitive

period. The tomb may be regarded as the extreme link in the further end of the chain of Roman history, as reflected in the Forum and illustrated by Signor Boni in the discoveries of the *cippus* under the Black Stone, the Rostra, the ritual pits, the massive Republican drains (beside which the Cloaca Maxima seems insignificant), the extraordinary underground gallery for scene-shifting, the Lacus and the Fons Juturnæ, the Sacred Way, the Heroon of Cæsar, the Regia, the house of the Vestals, the Basilica Æmilia, and the Church of Santa Maria Antiqua—to enumerate only the more important of his astonishing results.

THE London *Times* states that the Lightning Research Committee, which was organized in January, 1901, by the Royal Institute of British Architects and the Surveyors' Institution for the purpose of obtaining accurate records of the action of lightning strokes on buildings, with a view to improving if possible the means of protection, has enlisted the services of over 200 competent observers in the United Kingdom, besides a considerable number in the colonies and India and in foreign countries. The War Office, the Home Office, the Post Office, the Trinity House Corporation and the United States Department of Agriculture have signified their willingness to furnish the committee with the required particulars of damage to buildings under their control resulting from lightning stroke. The heavy thunderstorms of last year afforded numerous opportunities of investigating and recording, upon lines laid down by the committee, the damage caused by lightning to buildings within their area of observation. The net result so far is a series of some 70 or more trustworthy records, which furnish promising material for the committee to work upon when sufficient *data* have been collected to enable them to formulate their conclusions. The committee make a point of getting photographs immediately after the occurrence of a disaster in cases of importance. Out of 60 cases tabulated by the committee up to the end of December, 1901, no fewer than 12 relate to buildings fitted with some form of lightning conductor. As regards the system recommended by the Lightning Rod Conference of

1882, *data* to hand are not at present complete enough to afford a practical test of its efficacy. The recently issued report, however, of His Majesty's inspectors of explosives goes to show that the system has been found wanting, and that there is ample justification for the present inquiry. Besides the grants made by the Institute and the Surveyors' Institution, the committee has been aided financially by the government grant committee of the Royal Society and by the Royal Meteorological Society. Valuable help has also been given by the Royal Institute of British Architects, the Surveyors' Institution, the Institute of Electrical Engineers and the Royal Meteorological Society by circularizing their members with a view to getting observers. The committee is constituted as follows: Mr. John Slater, chairman; Major-General E. R. Festing, C.B., F.R.S., Mr. J. Gavey, M.I.C.E., General Post Office; Mr. W. P. Goulding, F.R.G.S., F.S.I., Dr. Oliver Lodge, Birmingham University; Mr. W. N. Shaw, F.R.S., Mr. H. Heathcote Statham, Mr. A. R. Stenning, F.S.I., Mr. Arthur Vernon, F.S.I., Mr. Killingworth Hedges, M.I.C.E., hon. secretary.

THE Secretary of Agriculture has drawn up at the request of the Senate a report on the extinction of the American bison, in which he says: (1) The American bison is on the verge of extermination. Scarcely a handful now remain of the millions which formerly roamed over the plains of the West. (2) So far as the department is aware only two small herds of wild buffalo are in existence in the United States * * * one in the Yellowstone Park, the other in Lost Park, Colo. During the past autumn several of the latter were killed, and while the department has no recent information as to the exact number of animals in these herds at the present time, it has reason to believe that the Yellowstone herd does not exceed 25 and the Lost Park herd eight or ten individuals. (3) There are no wild buffalo in Canada, except in the Peace river country, where a few woodland buffalo, believed to be a different species from our plains buffalo, still exist. (4) A number of buffalo have been domesticated and half-domesticated. In addi-

tion to the small herds in zoological parks and in the hands of private individuals there are three important herds—the Corbin herd on the game preserve of the Blue Mountain Forest Association in New Hampshire, the Allard herd on the Flathead Indian reservation in Montana, and the Goodnight herd (containing about a hundred cross-breeds) at Goodnight, Tex. (5) Both the Allard and Goodnight herds consist in part of cross-breeds known as 'cataloes' obtained by crossing buffalo bulls with domesticated cows. Mr. C. J. Jones, the originator of this breed, states that he has succeeded in crossing the buffalo with almost all the different breeds of cattle, but that he considers the Galloway and the Polled Angus the best for this purpose. (6) Recent information indicates that the Allard herd is being broken. Thirty-five animals were sold last year, and a number of others within the past few months. If the government could acquire possession of these buffaloes they might be placed on some reservation under competent management, and if properly protected could be preserved indefinitely. Unless this is done there is little or no hope of maintaining the herd in its entirety. So far as known the Goodnight herd is not for sale, but a proposition has several times been presented to Congress regarding the reservation of certain public lands in New Mexico for their preservation. Under proper restrictions this plan might result in the perpetuation of the herd for some years. (7) Should the government acquire possession of a considerable number of full-blooded animals, it is possible that the absolute extermination of the species might be long delayed. To avoid danger of destruction by epidemic disease and deterioration by too close inbreeding, the government herd should be divided and kept in at least two widely separated localities. This would admit of interchange of blood when necessary.

UNIVERSITY AND EDUCATIONAL NEWS.

THE General Assembly of the State of Iowa has passed a mill tax for the building support of the three educational institutions of Iowa, as follows: State University at Iowa City, one fifth of a mill to run for five years. This will